Inception

Reddit Robot

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1   General Concept

This software will be a "bot" that autonomously does action on the wesite reddit.com. The bot can have several goals that at regular intervals will attempt to do on the wesite. The bot should also be extensible for adding new goals in the future. The bot should also try to enforce the rules of the site to try preventing it from getting banned.

The current main concept for what it will do is; get mentioned by a user, the bot will try to find a link to an image, and then modify the image before reposting it. The main concept is mostly to be an example and guide for creating the framework for interacting with reddit.

2   Use Cases

- (substep) Authenticate as a User. Be able to do the appropriate steps to get tokens from the servers. This includes first time access and session token refresh.

- Read Data. Read items about the user. Most important being direct messages and replys to posts.

- Post Content. Often this will be in response to another user. This will use the credentials of its own user to post.

- Download Images. Read a post to look for links to an image or gallerly of images. This often will be either a direct link or link to imgur.

- Upload Images. Use an external hosting service to post the pictures. This is likely to be the free service imgur.

3   Supplementary Specification

- JSON is used for all responses and replies

- C++ language

- Extensible structure to allow expanded functionality past the basics

- Preferably able to move the API wrapper to other projects (portable wrapper)

- Store the tokens on disk to allow the program to be started and run without re-authenticating

- Follow the basic rules for using the API

    - Limit request rate to be reasonable
    - User Agent string must be set and unique to identify the bot on the servers
    - Use the new OAuth system and not the old direct json system

4   Proof of Concept

A simple program of the most basic nature was put together to do the first steps of authenticating a user. This was to show that the Qt framework objects were going to work just fine. This included setting the headers on the request and getting a response back from the server. The code did not do all the steps needed to finish authenticating as it was seen that it would work at this point.

A second program was put together to test the way Qt handles JSON. The objects used for this are sufficent for our goals. While the code didn't do anything reactive, it was practice at using the objects to see how it reacts to JSON.

5   Iteration Plan

Since there is only a single person working on this project, the goals will be simple Authenticating a user, storing the tokens for subsequent uses, and reading data should fill all the time. This may need to be reduced in scope as it is a new field of effort for me.

6   Glossary

API - Application Interface to allow external software to interact

bot - autonomously running software whose goal is to interact with a different system

imgur - website that hosts iamges on the internet for free. often used on reddit

JSON - JavaScript Object Notation, a standardized way to transport data

OAuth - an authentication scheme that has a user ok an application, the application gets tokens to use to authenticate, and the user can revoke the tokens at any time

Qt - Framework being used that includes many pre-built tools

reddit - website that hosts user posts and discussions - a place to share and sort links

sub-reddit - a sub-section of the reddit website that is supposed to be dedicated to a single topic (eg fluffy_puppies)

User Agent - a field in the header of an http request to identify what type of system is making the request